

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference GY 0045 WO		FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/SE 2002/001888	International filing date (day/month/year) 16-10-2002	Priority date (day/month/year) 21-10-2001	
International Patent Classification (IPC) or national classification and IPC B67D 3/00			
Applicant Gyros AB et al.			

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☐ (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input checked="" type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input checked="" type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input checked="" type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand 09-04-2003	Date of completion of this report 23-01-2004
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Anna Lundqvist /LR Telephone No. +46 8 782 25 00

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE 2002/001888

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
☐ publication of the international application (under Rule 12.4)
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☒ the international application as originally filed/furnished

☐ the description:

pages _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ the claims:

pages _____ as originally filed/furnished

pages* _____ as amended (together with any statement) under Article 19

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ the drawings:

pages _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

Box No. II **Priority**

1. ☐ This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
- ☐ copy of the earlier application whose priority has been claimed (Rule 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 66.7(b)).
2. ☐ This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

Priority is considered valid, therefore document US 2001042712
A1 is of no relevance.

Box No. IV Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
☐ paid additional fees.
☐ paid additional fees under protest.
☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:

- ☐ complied with.
☒ not complied with for the following reasons:

The separate inventions are:

Invention 1: Claims 1, 2, 5 and 10-26 relate to a method and arrangement for dispensing droplets of a liquid on a surface of a rotating disc. The disc includes a triggering mark.

Invention 2: Claims 3, 4 and 6-9 relate to a dispensed liquid comprising a gradient with respect of at least one of its constituents.

The special technical feature of invention 1 is to making it easier to determine when to drop the next droplet of liquid on the right spot of the disc.

The special technical feature of invention 2 is to provide a liquid with a gradient.

These inventions are not so linked as to form a single general inventive concept (PCT Rule 13.1). There is no technical relationship among the inventions involving a corresponding special technical feature (PCT Rule 13.2).

4. Consequently, this report has been established in respect of the following parts of the international application:

- ☒ all parts.
☐ the parts relating to claims Nos. _____

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	<u>1-26</u>	YES
	Claims	_____	NO
Inventive step (IS)	Claims	<u>4, 7-9</u>	YES
	Claims	<u>1-3, 5, 6, 10-26</u>	NO
Industrial applicability (IA)	Claims	<u>1-26</u>	YES
	Claims	_____	NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

D1: EP 0601714 A1

D2: WO 0079285 A3

D3: WO 6063589 A

D1 describes a method and a device for determining location and the number of a fluorescent molecule. Liquid is dropped on well defined areas on a rotating disc, which is rotated with constant velocity. (See page 13, line 17-20, page 13, line 38-41, figures 25 and 26).

D2 describes a device and a method for the performance of miniaturized homogeneous assays, using a rotating disc, which is a micro fluidic disc.

D3 describes devices and methods for using centripetal acceleration to drive fluid movement on a microfluidic system. In the embodiment there exists a gradient in the fluid. (See column 7, line 69 - column 8, line 5.)

The technique described in claims 1, 2 and 19 differ from what is mentioned in D1 in that a trigger arrangement is used. To use such an arrangement is considered obvious for a person skilled in the art. What is claimed in claim 1, 2 and 19 is not considered to involve an inventive step.

The techniques mentioned in claims 3, 5, 6, 10-18 and 20-26, such as to determine the exact time for the triggering mark to pass the triggering position, to have several target areas for the droplets, to use the flow-through dispenser, to have a gradient in the fluid or to have several dispensers is considered to be details known to a person skilled in the art or is possible to find in document D2 or D3. Thus what is claimed in claims 3, 5, 6, 10-18 and 20-26 is not considered to involve an inventive step.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. VI Certain documents cited

1. Certain published documents (Rule 70.10)

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
US 0010042714 A1	22/11/2001	23/05/2001	

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure

Date of non-written disclosure
(day/month/year)Date of written disclosure
referring to non-written disclosure
(day/month/year)

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 1: It is not clear in what way the method is intended to be executed. There are a lot of steps with a numbering of i), (A), (B), a), which are difficult to follow. The structure of the claim should be clearer.

It is not clear what is meant by "providing (A) said disc".

It looks as if the symbol TA1 is used both for "target area" and "inlet port", which is a bit confusing.

Claim 8 and 9: These are not formulated in a clear way. -

Claim 15 and 19: It is not clear what is meant by I in "microchannel structures I, II, III"

Claim 17: This claim can not refer to claim 17 and 18.